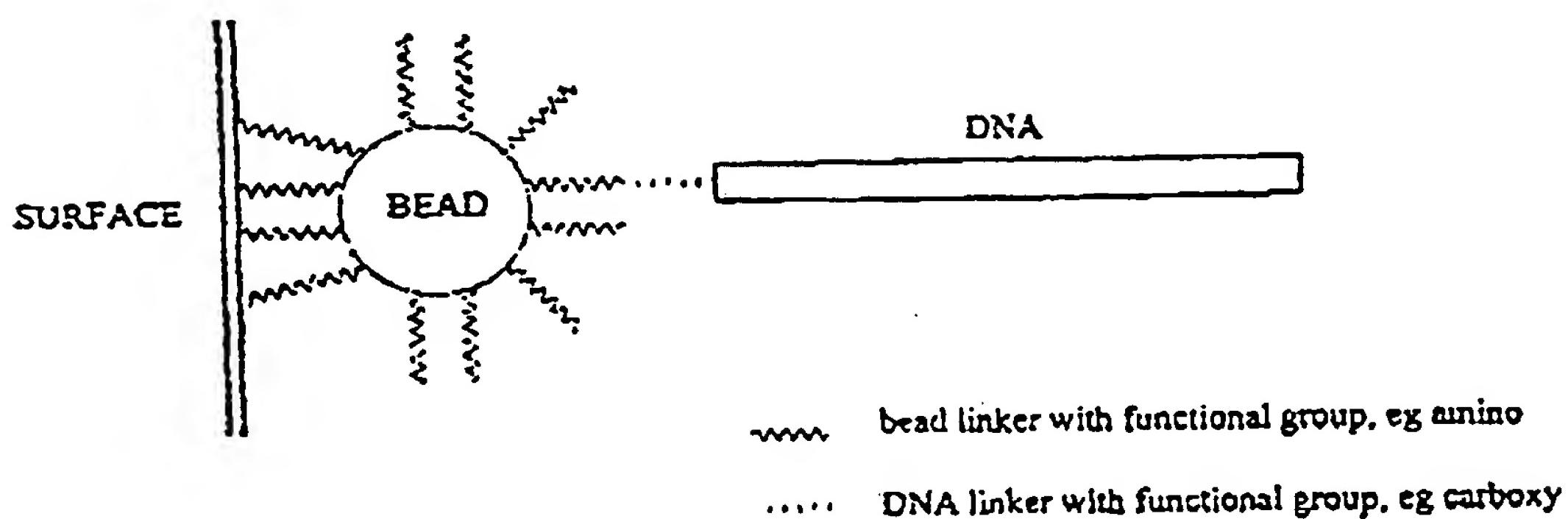
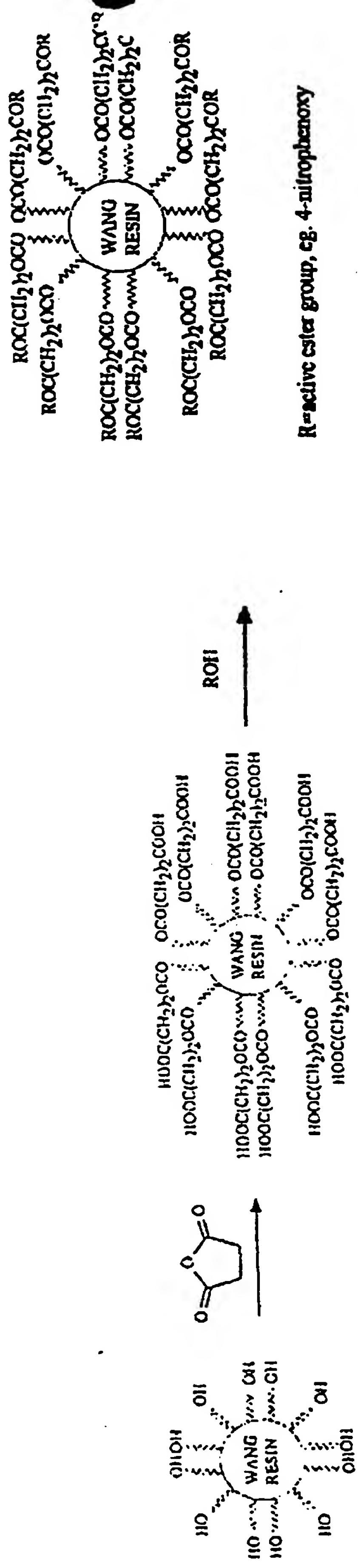
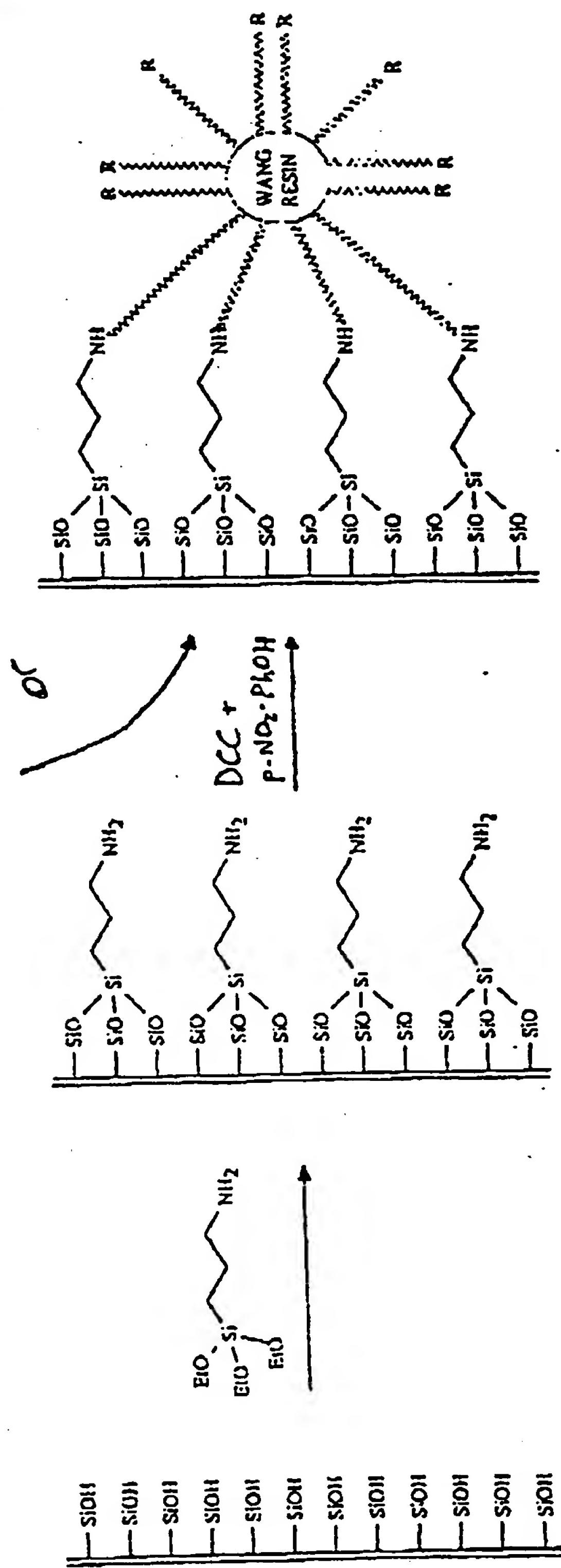


FIGURE 1





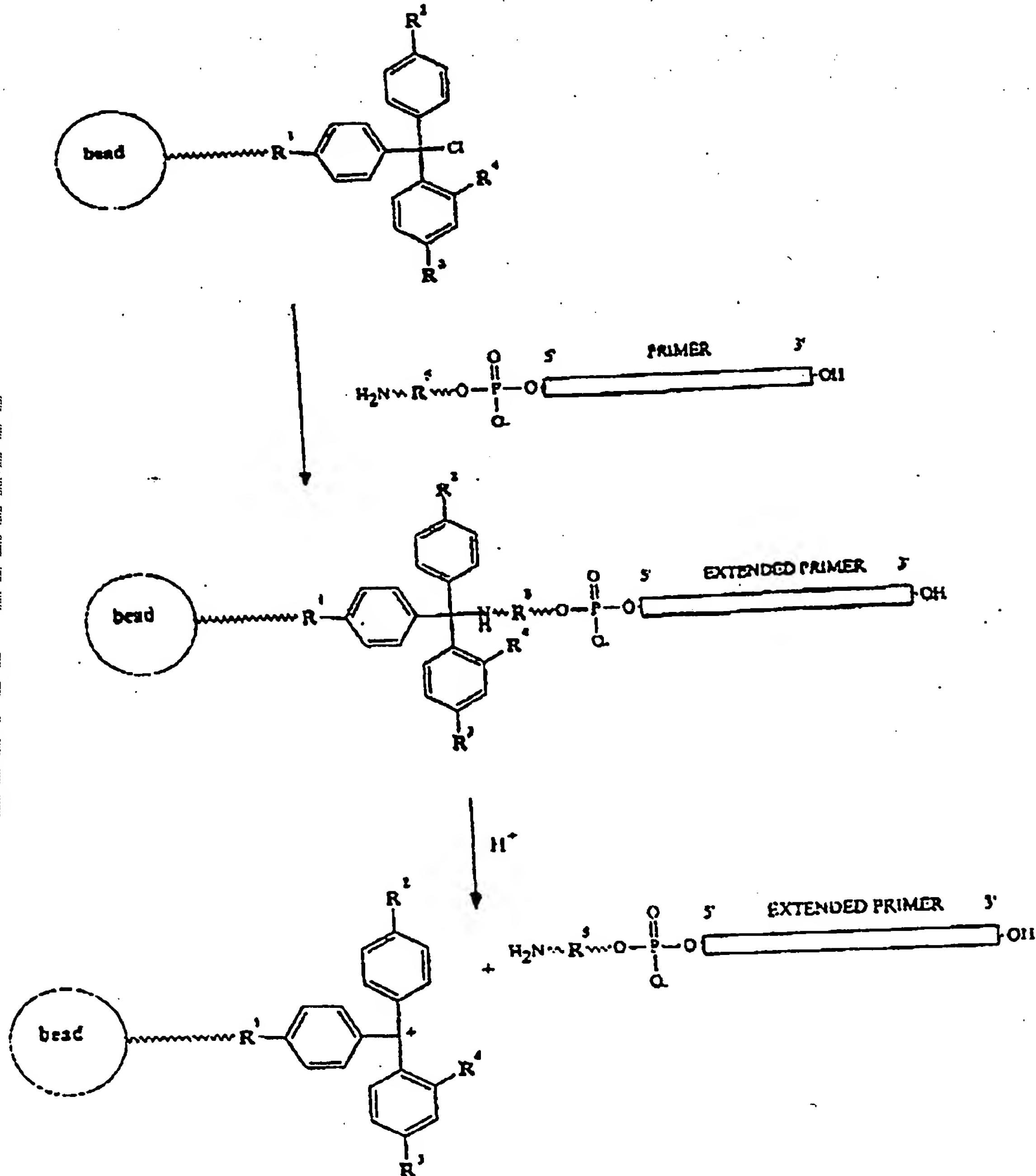
R = reactive ester group, e.g. 4-nitrophenoxy



R = reactive ester group, e.g. 4-nitrophenoxy

R = 4-nitrophenoxy

FIGURE 3



$\text{R}^1 = \text{COO}; (\text{CH}_2)_n; (\text{para or meta})$

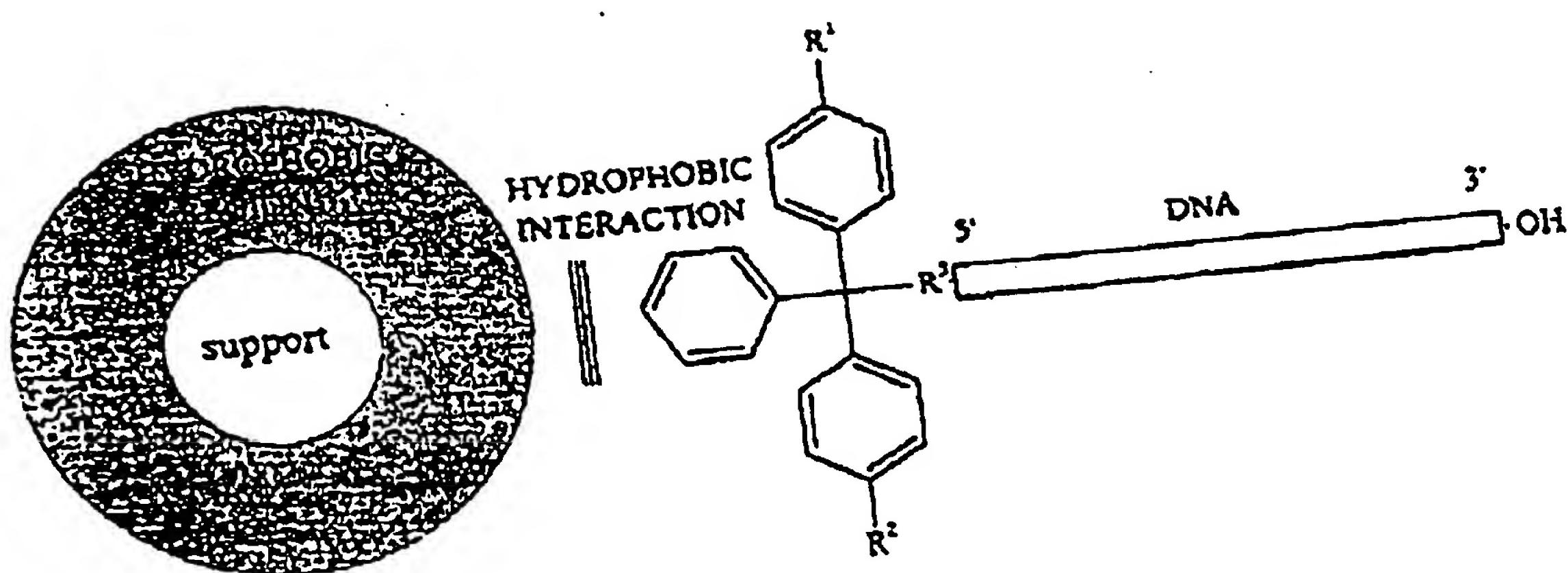
$\text{R}^2 = \text{MeO}; \text{H}$

$\text{R}^3 = \text{MeO}; \text{H}$

$\text{R}^4 = \text{Cl}; \text{H}$

$\text{R}^5 = (\text{CH}_2)_n; (\text{CH}_2)_n\text{CONH}(\text{CH}_2)_n$

FIGURE 4



$R^1 = \text{OMc, H}$   
 $R^2 = \text{OMc, H}$   
 $R^3 = \text{O, NH}$

Fig. 5

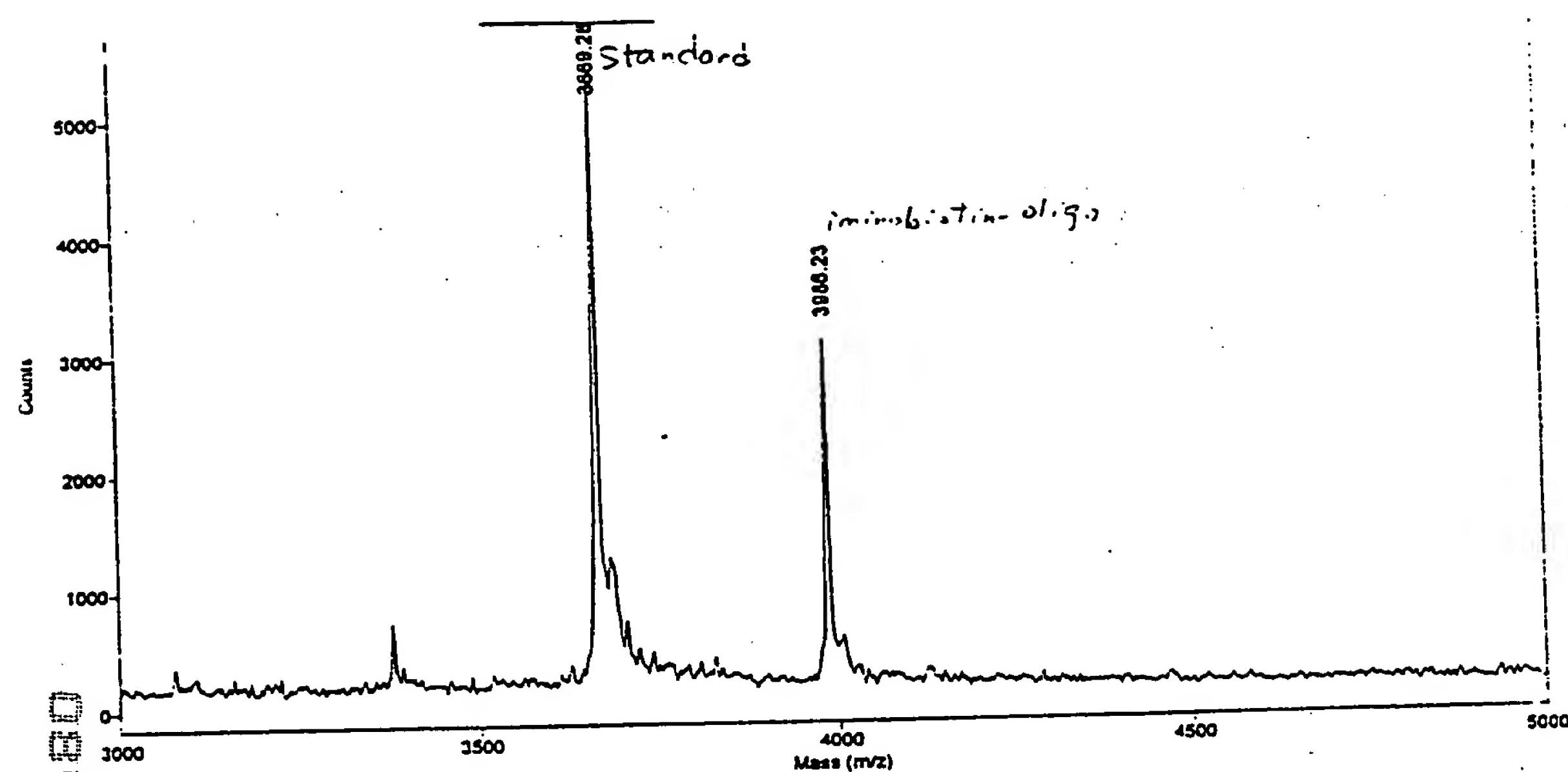
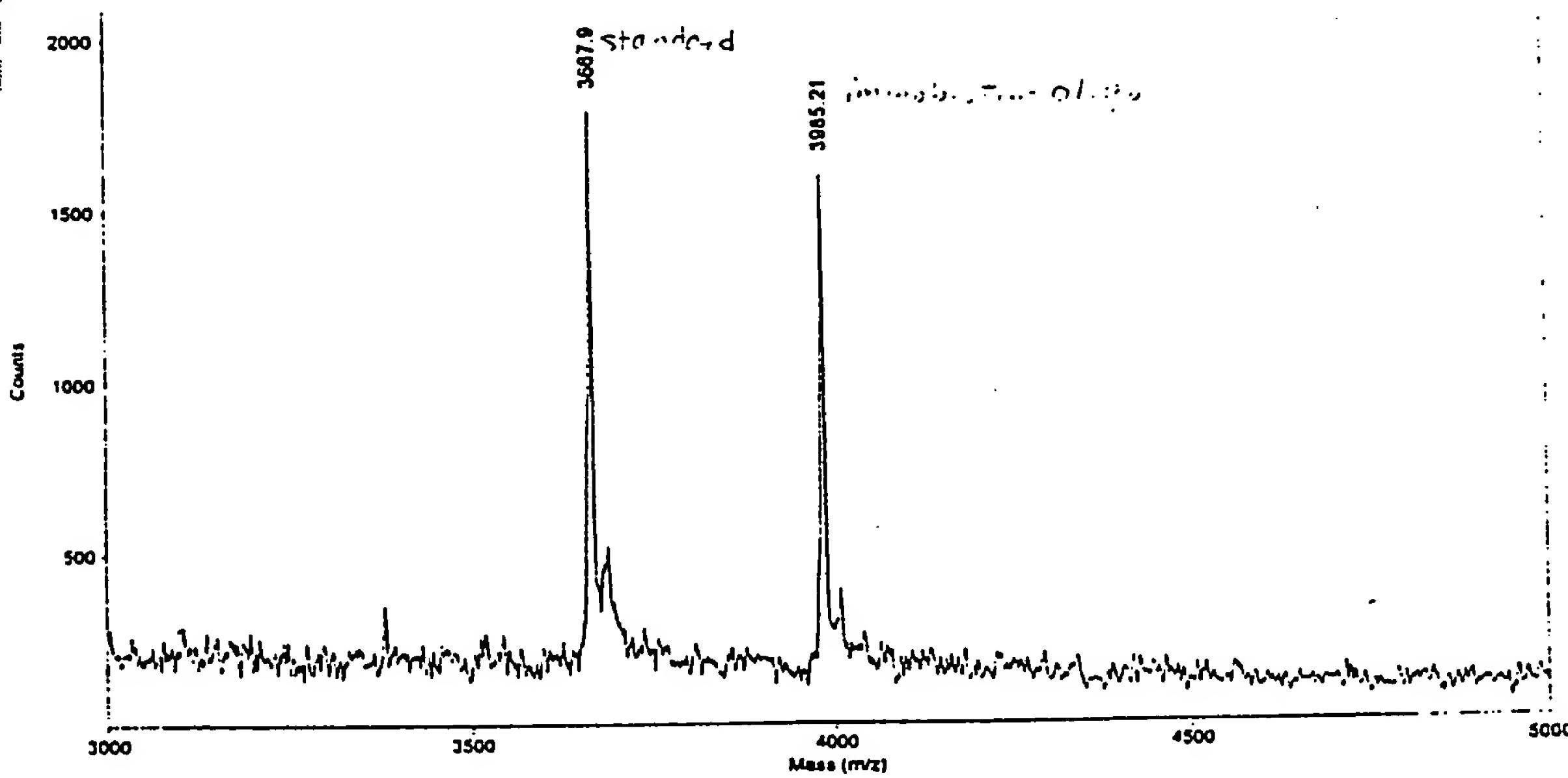


Fig. 6



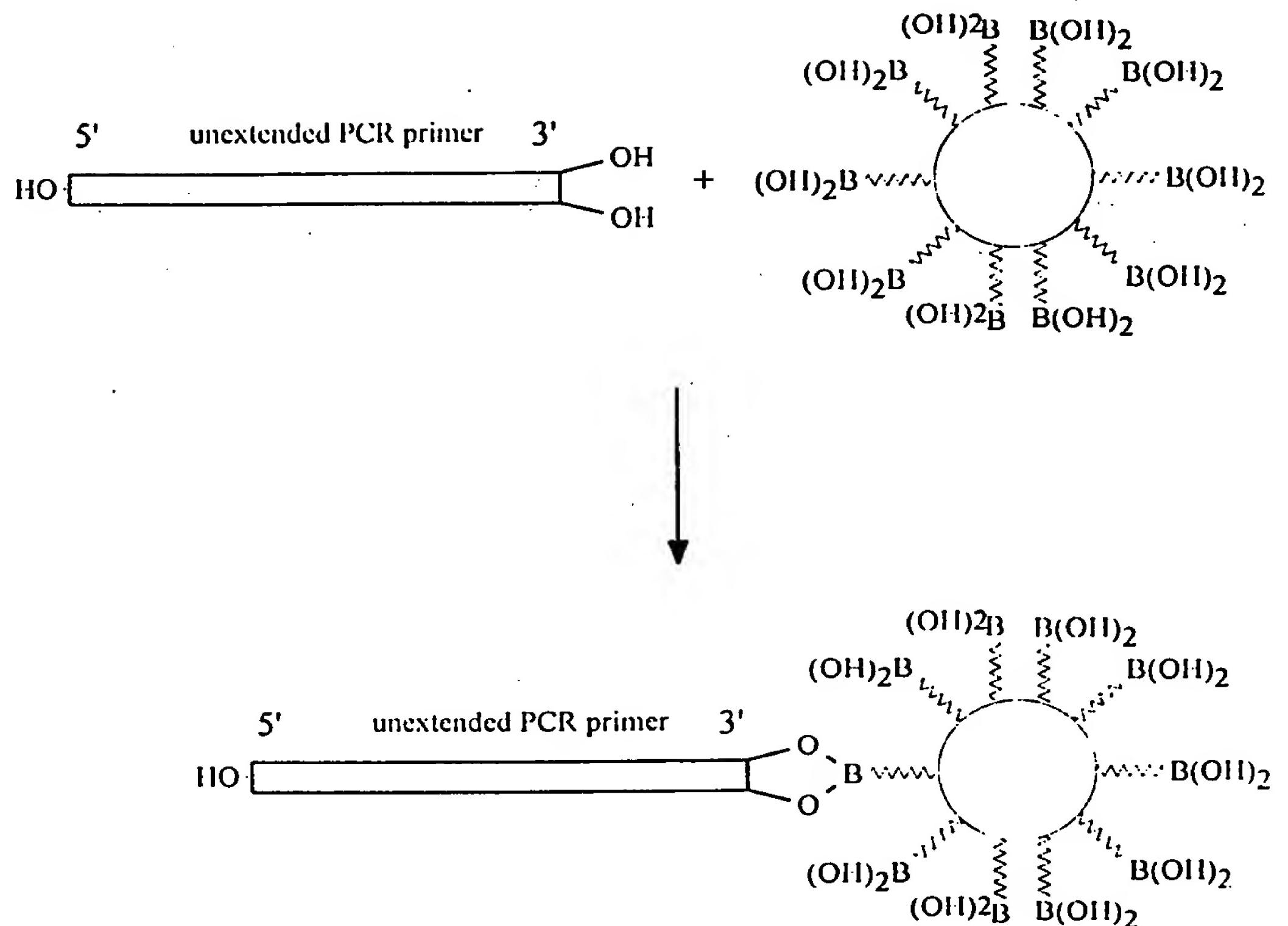
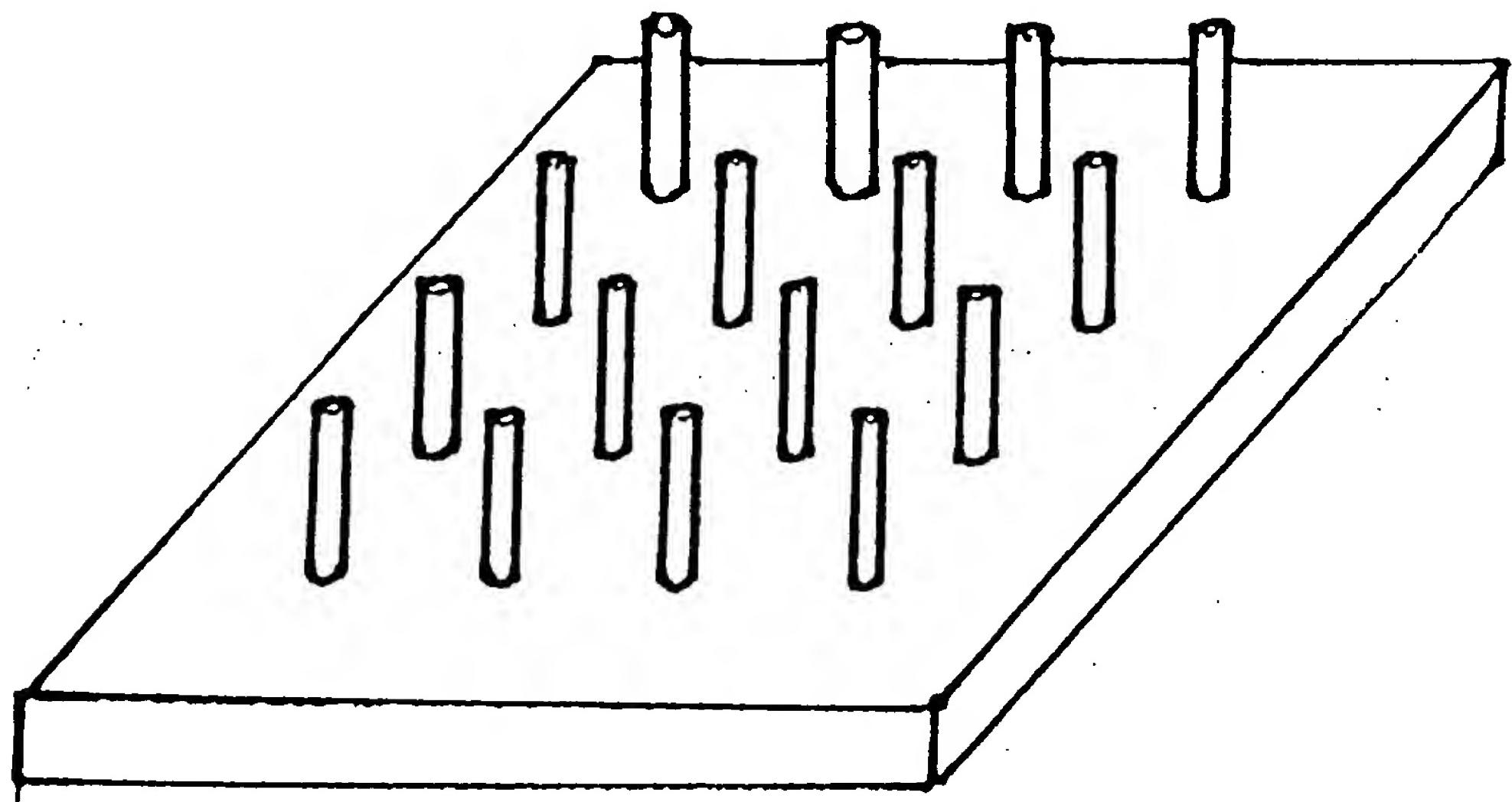
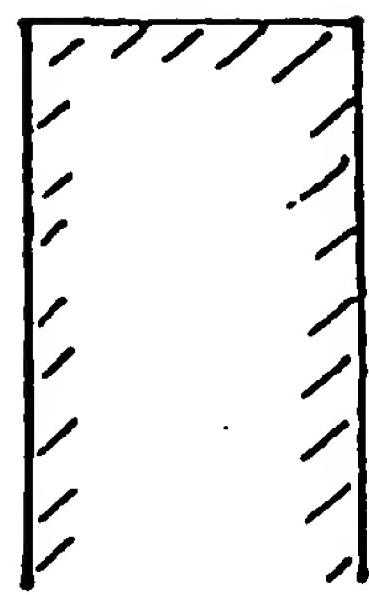


Fig. 7

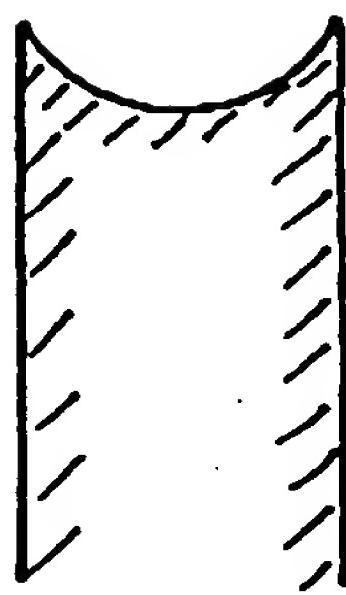


Pin tool

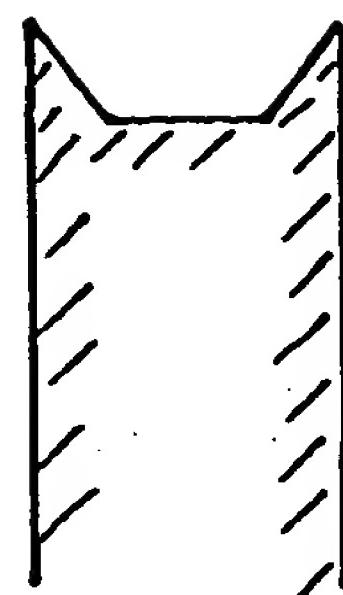
Fig. 8



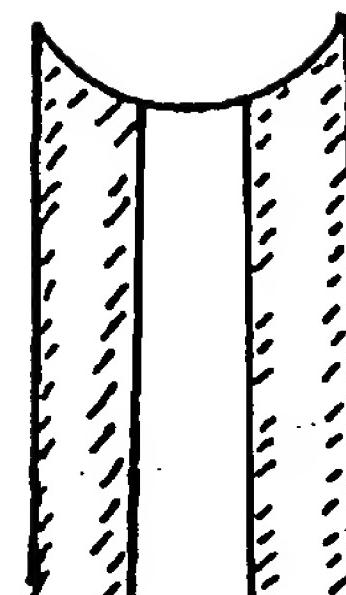
a.



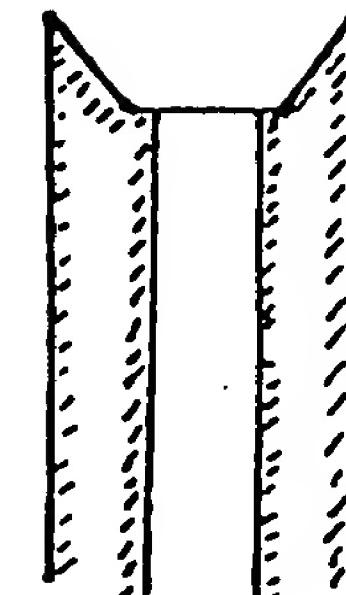
b.



c.



d.



e.

SOLID PIN

PIN = 'LIGHT PIPE'  
(not to scale)

Fig. 9

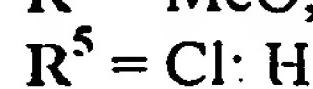
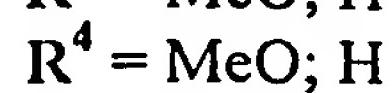
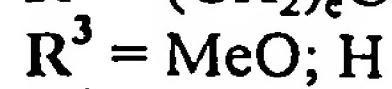
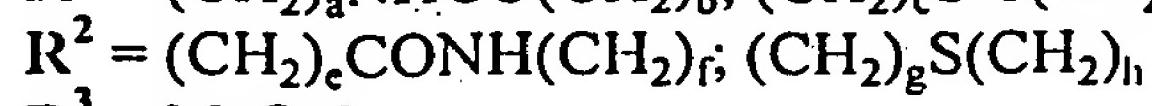
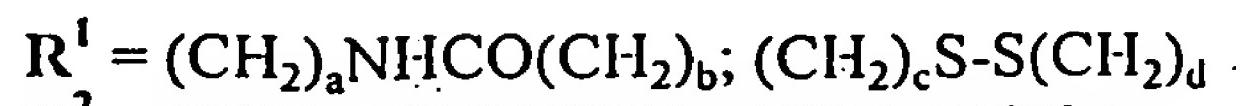
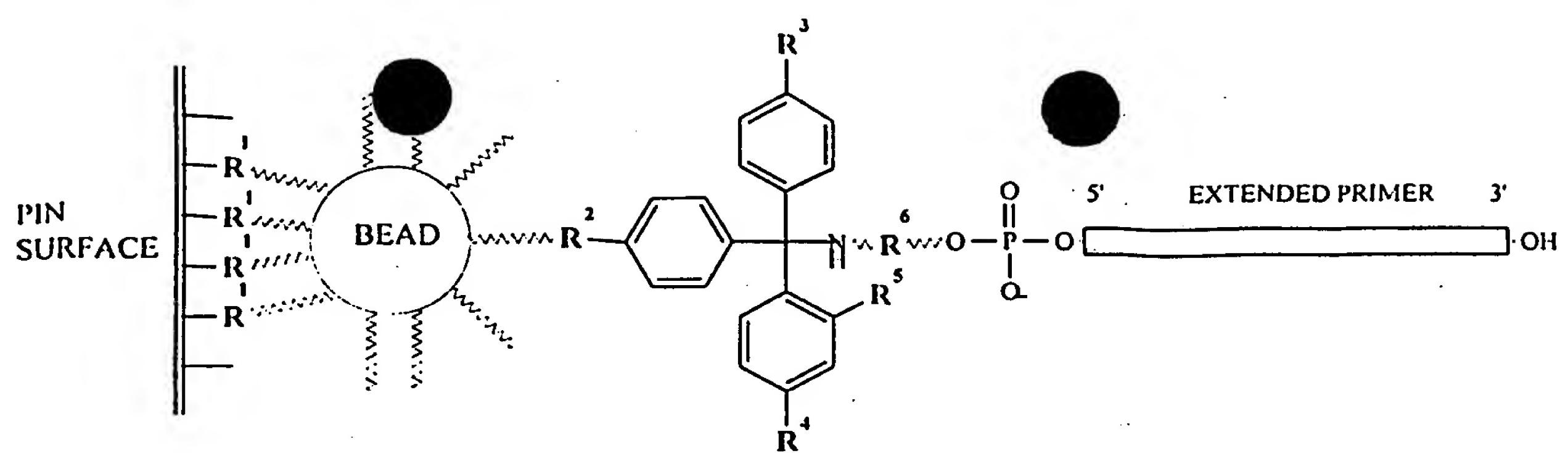


Fig. 10

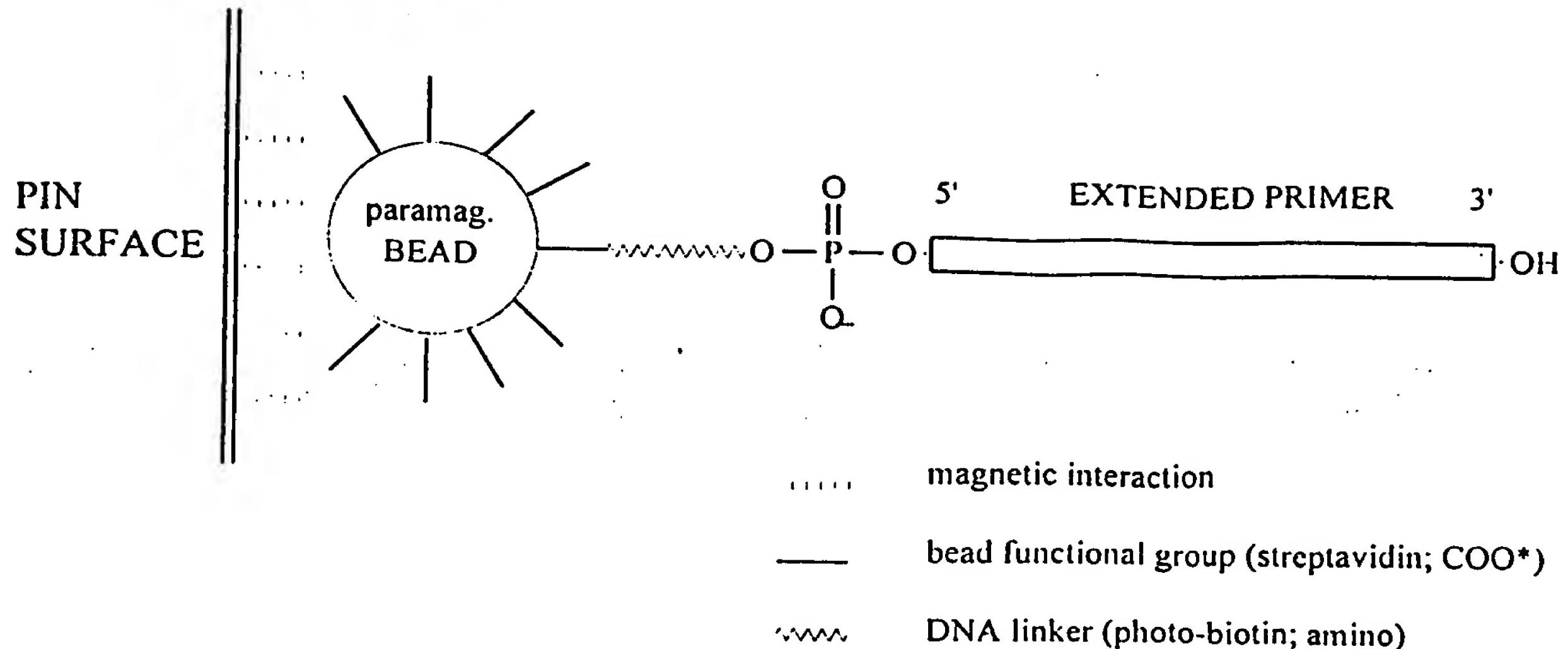
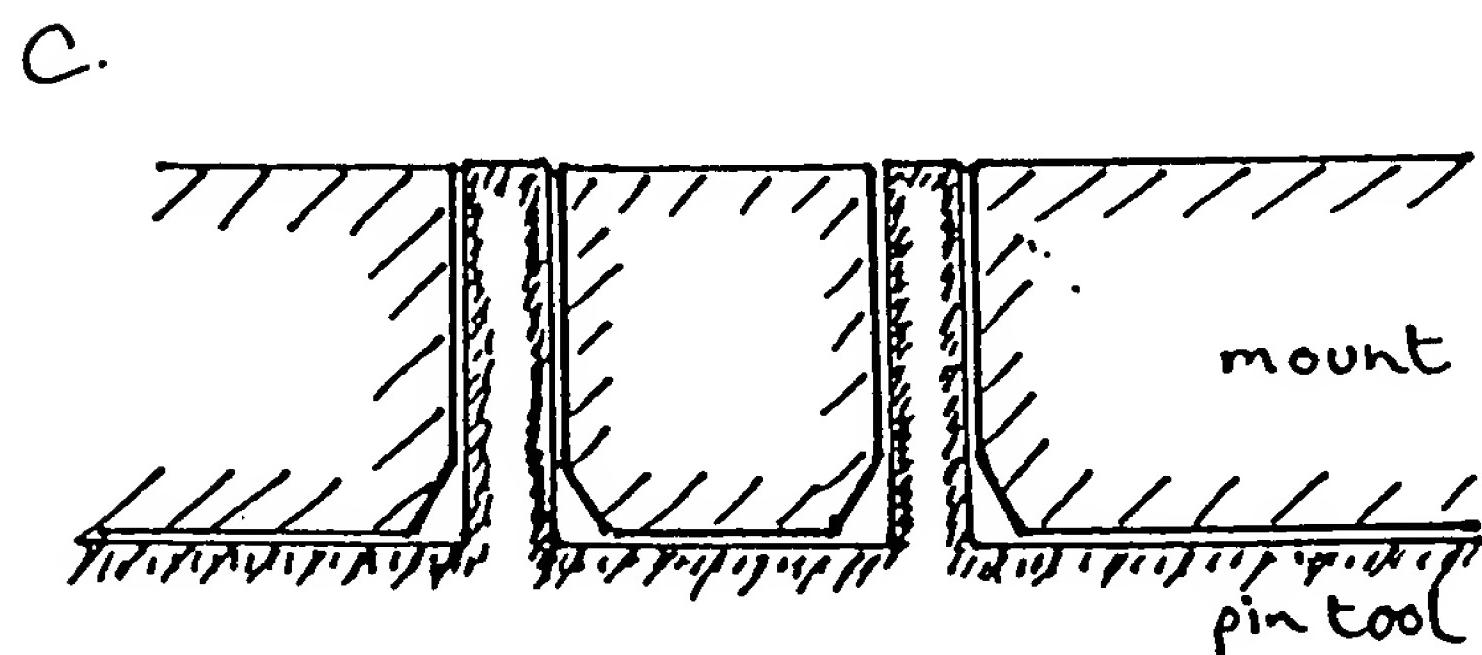
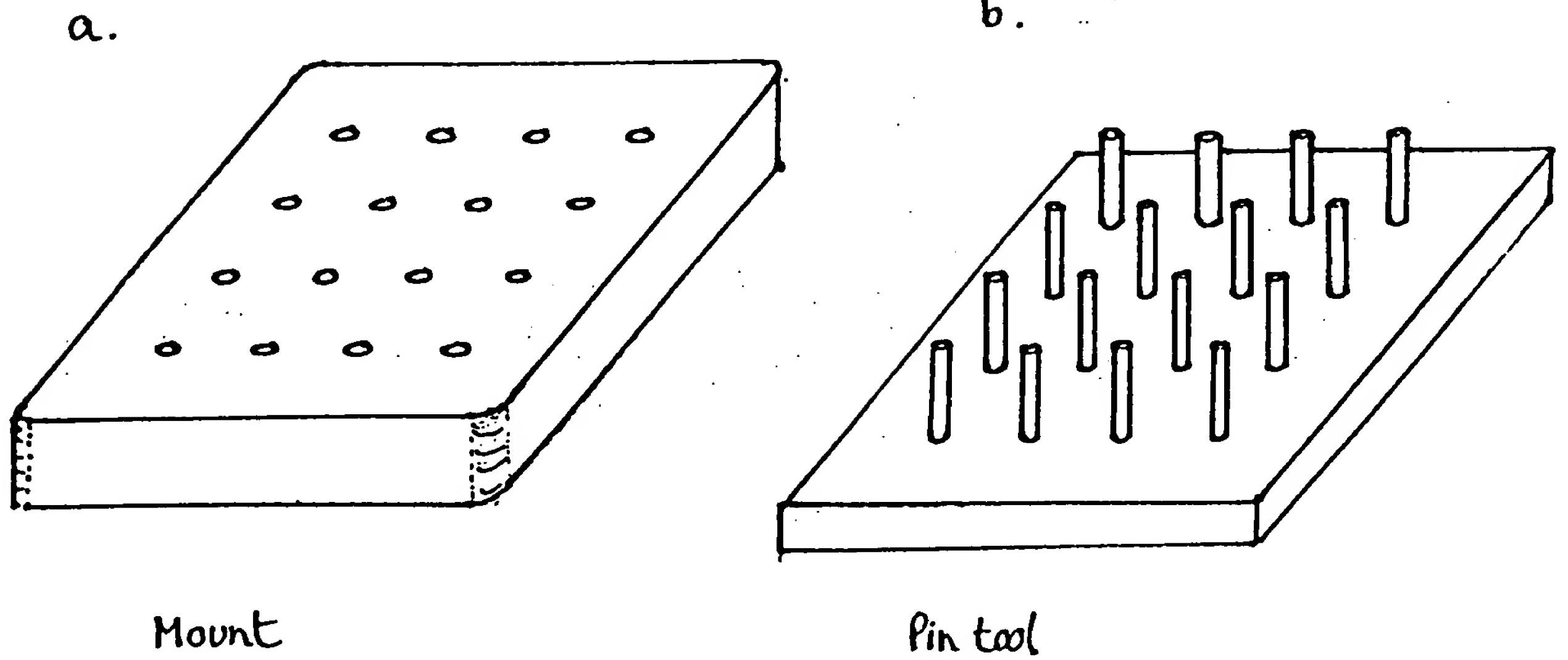


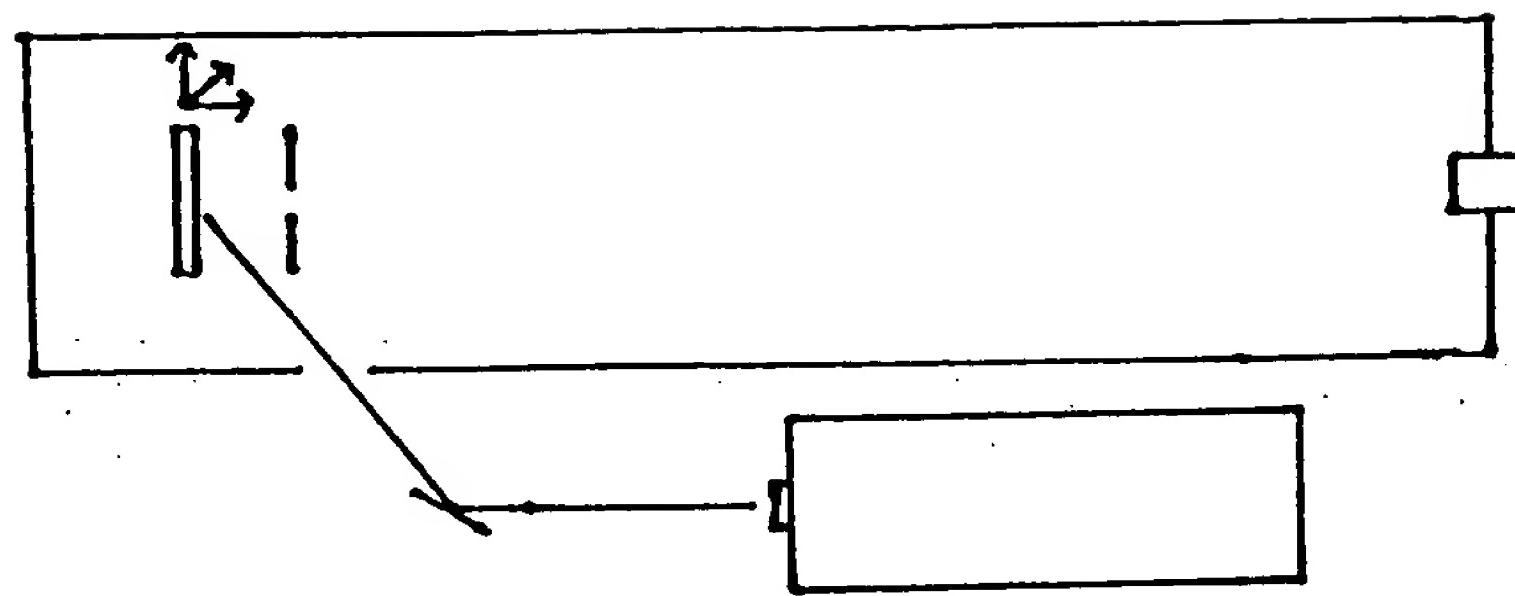
Fig. 11



Cross section of mount  
ε pin tool  
installed

Fig. 12

Pin type a,b,c



Pin type d,e

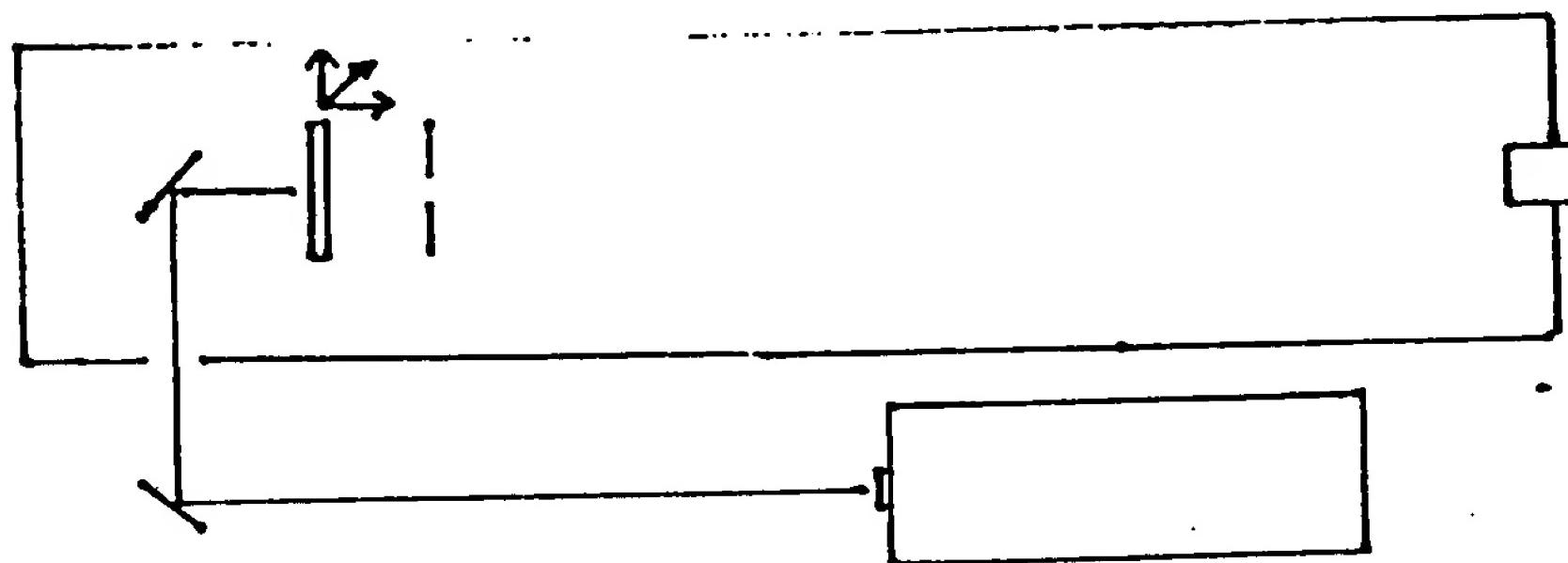


Fig. 13

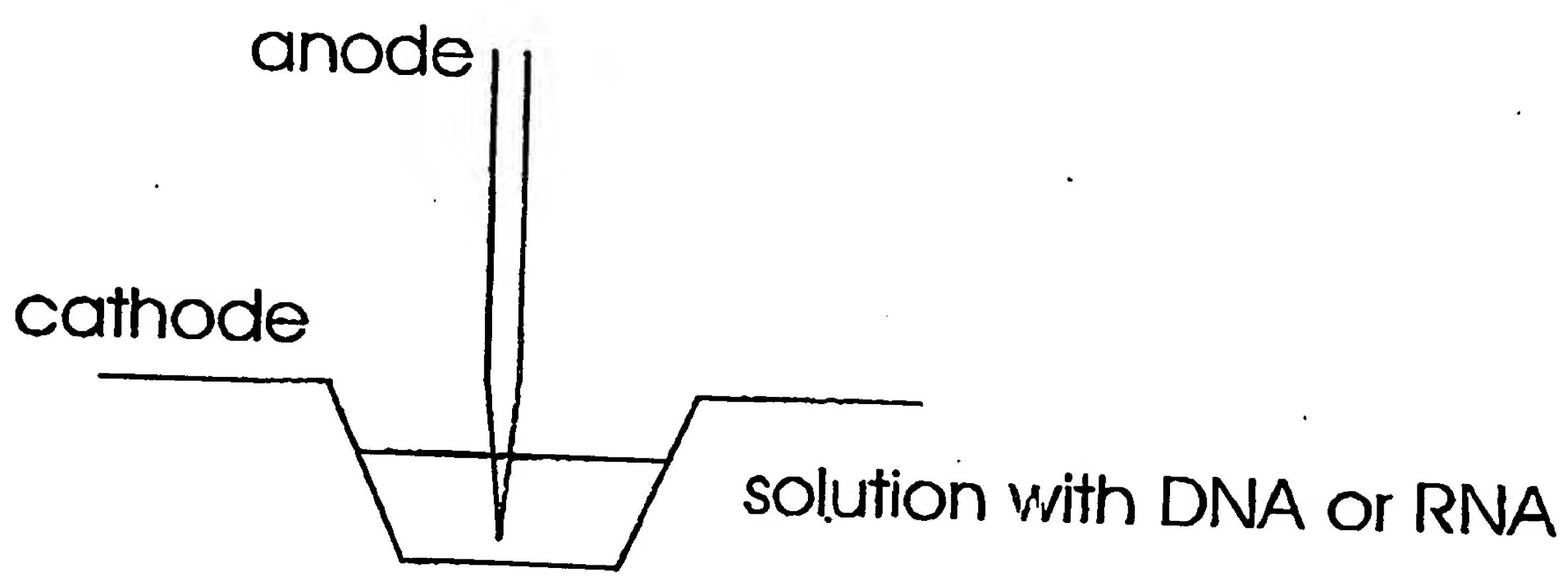


Fig. 14

Experimental flow diagram:

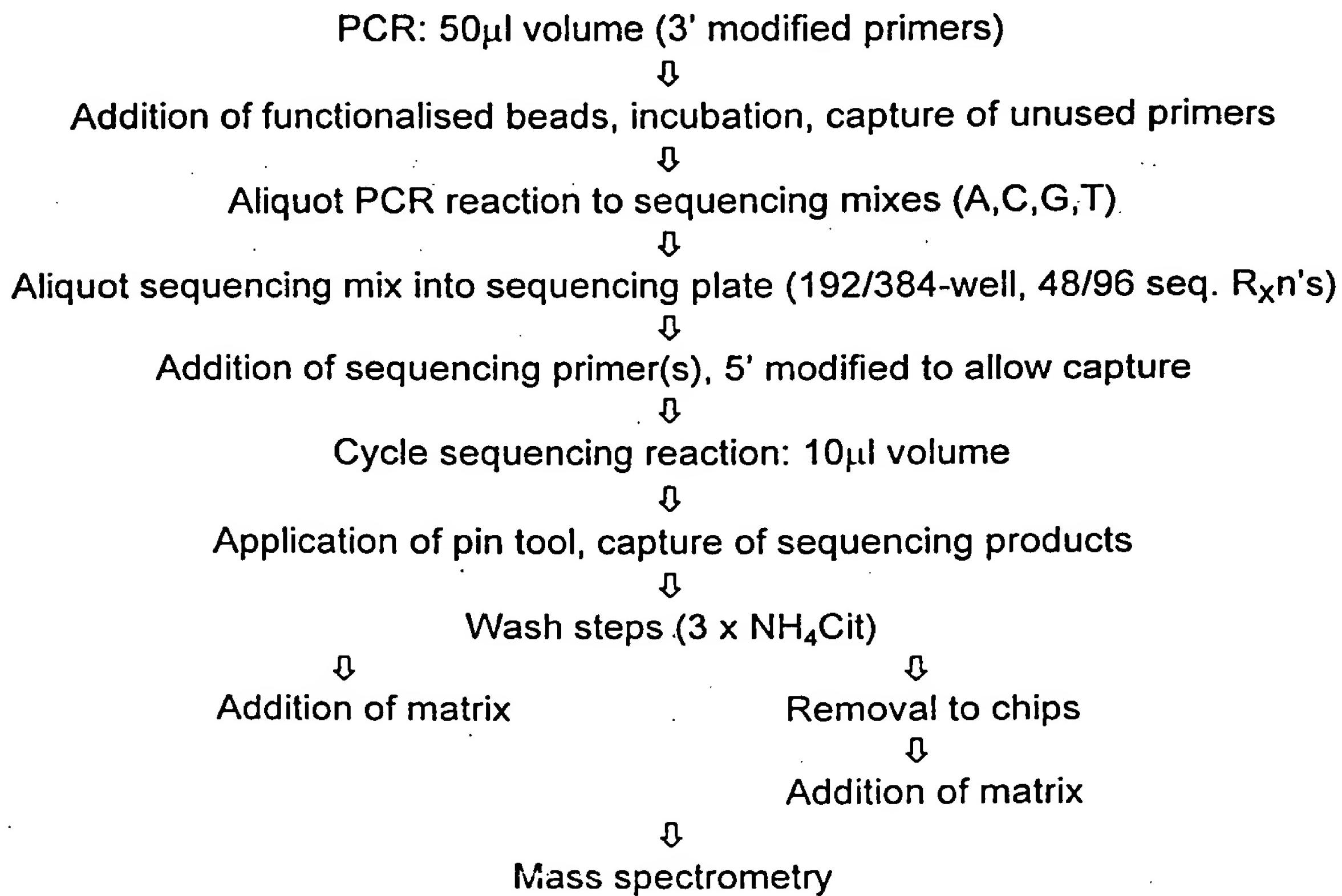


Fig. 15